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A CASE

OF

IRRITATION OF THE CHORDA TYMPANI.

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OF NEW YORK.

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IRRITATION OF CHORDA TYMPANI; PARALYSIS
OF FACIAL; POLYPOID GROWTH UPON THE
MEMBRANA TYMPANI; PERIOSTITIS OF THE
MALLEUS AND ADJACENT BONY TEXTURES.

BY HENRY D. NOYES, M. D., NEW YORK.

DR. W. E., aged 33, Denver City, Colorado, gives the following history, in his own words:—

"A distressing tinnitus aurium has troubled me as far back as I can remember.

"When quite a young child I used to lie awake at night and complain that the ugly noises would not let me go to sleep. At that time I had no suspicion that the sounds were not real, and it was only by the observation of later boyhood that I came to realize that they had their origin in a disordered condition of the ear itself, and that only the left ear was affected.

"Through my reiterated complaints of noises which had no existence, and my constant assertion that I could not keep them out by stopping my ears, those having charge of me recalled to mind, as a circumstance too trivial to be particularly noted at the time, that when I was about one year and a half old I had an abscess in my left ear, which seemed to cause me a great deal of pain, until it broke and discharged its contents. After this it was supposed to have healed up entirely. Of the exact nature and locality of this abscess I have no knowledge. The tinnitus was never absent, was different at different times, and at one time or another it embraced almost every sound within the range of my actual experience, and without exception it was made up of sounds with whose real counterparts I was perfectly familiar. It was always aggravated by violent exercise.

"A noise like the rumbling of a distant waterfall was the

most constant and the most distressing. Among other noises the croaking of frogs, the ringing of bells, and the singing of katydids were the most conspicuous.

"The hearing of the offending ear was seriously impaired, and there was unmistakable evidence of perforation of the *membrana tympani*. By closing the external meatus with the thumb and exerting sudden pressure, a current of air could at any time be driven through the Eustachian tube. This current of air imparted a distinctly bitter taste to the root of the tongue. The secretion from the walls of the meatus was diminished in quantity, and was somewhat harder and a good deal darker than normal cerumen, and had a slightly fetid odor.

"This condition of the ear was maintained without material change until my twenty-third year. About this time, without any exciting cause of which I am aware, a thin yellow discharge from the meatus began to manifest itself. It was only slightly offensive and not very profuse in quantity, but was very persistent. Syringing the ear with warm water or astringent solutions seemed not to affect it in the least. Several times since then the discharge has spontaneously ceased, sometimes for months at a time; but sooner or later it has always returned. Its cessation was never followed by any inconvenience. Soon after it was first established, there supervened an occlusion of the opening which had heretofore existed in the *membrana tympani*, and I have never since been sensible of the passage of air through this membrane.

"A sensation very difficult to describe, now for the first time began to give me serious annoyance. It was a sensation of weight, of pressure, of obstruction, and of distension, and affected the entire left side of my head. It came at first in paroxysms of uncertain length, and at irregular periods, but soon became constant. I finally grew in some degree accustomed to it and was less disturbed by it than when I first felt it. Not long after this very unpleasant symptom was first observed, the *chorda tympani* nerve began to manifest

symptoms of being in a state of irritation. I one day noticed that on pressing the tip of the finger rather forcibly into the opening of the auditory canal, the gustatory nerve of the left side of the tongue was quite sensibly affected. Soon afterward I noticed that a sharp pinch given to any part of the pinna, between the thumb and finger, induced the same result. Within two or three weeks after this peculiar irritation of the tongue first manifested itself, it could be excited at any moment by merely passing the tip of the finger over the left side of the face. It continued to be more and more easily induced, until finally, within two or three months after its first advent, it became constant, without any external exciting cause. Since then it has never been wholly absent, and the means which first called it forth, to wit, pinching the pinna, etc., at any time intensifies it.

"An increased flow of saliva into the left side of my mouth has always been in direct proportion to the amount of this peculiar irritation present. The larger portion of this saliva comes through Wharton's duct, but the left parotid gland also secretes more abundantly than the right.

"Paralysis of the facial nerves finally supervened quite suddenly about the first of last February, nearly ten years after the stoppage of the opening in the ear-drum. During all this period the tinnitus aurium had been in no degree arrested, having maintained throughout its original characteristics.

"For several months preceding the paralysis there was slight but very frequent twitchings of all the muscles supplied by the facial nerve. Rarely more than one muscle was affected at one time.

"It was during an attack of acute inflammation of the auditory canal that I laid down one morning to take a nap. I attributed this inflammatory attack to undue exposure. The walls of the meatus were hot, tender to the touch, and quite painful, but there was no deep-seated pain. When I awoke, after sleeping about two hours, the paralysis had taken place."

My inspection of the case showed complete paralysis of

the left side of the face, including the forehead and orbicularis oculi; the mouth, which is large, drawn to the opposite side; the tongue, when protruded, came out perfectly straight, and could be moved at will to either side; the meatus auditorius large and straight; the drum-head nearly flat, tense, white, and thick, not vascular. Seated upon its upper and middle portion was a polypoid growth as large as a small pea. It was firm to the touch, and though red, not disposed to bleed. The slightest touch of it, though not painful, excited sensations in the tongue. A moderate quantity of pus was found in the canal, but the walls were not sensitive to touch. The Eustachian tube pervious; the cavitas tympani easily inflatable. Hearing distance for the watch requires contact.

To destroy the polypus the galvano-caustic was employed. Its use was severely painful, but not succeeded by great reaction. A rather copious discharge ensued, the sense of pressure in the head was much abated, and the tumor grew smaller. A succession of less severe cauterizations by nitric acid were afterwards employed, and finally what remained of the growth was deeply incised by a needle and treated by nitric acid. After this it disappeared, and the drum-head exhibited no irregularity of surface. It seemed evident, then, that there was no similar granulation tissue in the middle ear. There was no perforation of the membrana tympani. The polypus sprang from the manubrium of the malleus, and a fair inference seems to be, that this bone had been the seat of chronic inflammation, involving its substance and periosteum, and which had caused the irritation of the chorda tympani. This must have existed since a very early period of the disease, and a more than ordinary amount of congestion must have existed in the bony tissues to have produced the cerebral symptoms, and finally the paralysis of the facial nerve. The employment of the galvano-caustic upon the polypus gave great relief to the heavy and oppressive sensations about the head, and the patient on returning home was quite free from this annoyance. The discharge from the ear disappeared. The hearing distance increased from watch con-

tact to watch at six inches. The paralysis of the facial nerve exhibited no improvement. The irritability of the chorda tympani was not completely relieved, but greatly abated. In this connection, I introduce the notes furnished by Dr. J. J. Mason, who was kind enough to take charge of the electrical treatment of the case.

"No response obtained by strong faradic currents, and as there seems to be an idiosyncrasy, consisting in excessive sensitiveness to the Voltaic current, no satisfactory test of its action can be obtained. Closing and opening five cells causes considerable vertigo, with no trace of contraction. Ten cells were tried, with no more effect on the muscles, but with great aggravation of vertigo. Very rapid interruption by clock-work was tried, with the effect of reducing vertigo, but of course diminishing the specific action of the current. The patient notices a sensation of taste referred to left chorda tympani, whenever he makes an effort to move the paralyzed side.

"The treatment has been continued (three times a week) up to date, and has consisted of mild faradic currents to the affected muscles. No improvement either in voluntary or electric 'contractility.'"

JOHN J. MASON.

NEW YORK, May 15, 1874.

The hyperæsthesia seems to be limited to the affected side, and only reveals itself to electric irritation.

Cases of persistent irritation of the chorda tympani are not often recorded, and the facts of this case possess both a clinical and physiological value. In the latter sense no new facts are shown, but the results of experiments upon animals are confirmed. It appears that the nerve has no control over muscles of the tongue, but simply excites sensations of pain and of taste, which are perceived chiefly at the side and upon the back of the tongue. It also in a marked degree provokes secretion from the sub-maxillary gland, and in a less amount from the parotid.

These are precisely the facts which have been elicited in experiments upon the lower animals.